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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/772,586

02/06/2004

Shunpei Yamazaki

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05/30/2006

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WASHINGTON, DC 20004-2128

EXAMINER

NGUYEN, THANH T

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/772,586 | | YAMAZAKI, SHUNPEI | |
| | Examiner | | Art Unit | |
| | Thanh T. Nguyen | | 2813 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 and 19-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/6/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3/13/06 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (U.S. Patent Publication No. 2003/0132987) in view of Mori et al. (JP Patent No. 2000/169977).

Referring to figures 1-67, Ogawa teaches a method for producing a semiconductor device comprising:

forming wiring using first solution ejector for ejecting a conductive material (see paragraph# 107, 232),

forming a resist mask on the wiring using a second solution ejector (see paragraphs# 58, 109, 234), and

etching the wiring using an atmosphere plasma device having linear plasma generator using the resist mask as a mask (see paragraph# 184).

Regarding to claims 4, 16, the solution ejector has one or more of solution ejection ports (57, paragraph# 210).

Regarding to claims 5, 17, a wiring material, or a resist, or the like is ejected using the solution ejector a substrate is heated (see paragraph# 201/227).

However, the reference does not teach etching the wiring using an atmospheric-pressure plasma device having a plurality of linearly-arranged plasma generators, and etching the wiring layer at the atmospheric pressure or near-atmospheric pressure

Mori et al. teaches etching the wiring (metal layer) by using high frequency plasma under atmospheric pressure (see abstract, meeting claims 1-3, 5, 13-15, 18).

Therefore, it would have been obvious to a person of ordinary skill in the requisite art at the time of the invention was made would etching the wiring layer by using high frequency plasma under atmospheric pressure in process of Ogawa as taught by Mori et al. because the process would enable to etch the metal easily.

It would be obvious to one ordinary skill in the art to etch the wiring layer using a plurality of linearly-arranged plasma generators with the same process as using in a linearly-arrange plasma generators to etch the wiring layer since it is well-known in the art to repeat the same process for multiple effect. See St. Regis paper, Co. V. Bemis Co. Inc. 193 USPQ 8, 11 (7th circuit 1977) (meeting claims 13-15).

Therefore, it would have been obvious to a person of ordinary skill in the requisite art at the time of the invention was made would etch the wiring using an atmospheric-pressure plasma device having a plurality of linearly-arranged plasma generators in process of Ogawa because the process would provide a uniform etching in the wiring layer.

Response to Arguments

Applicant's arguments filed 3/13/06 have been fully considered but they are not persuasive.

The rejection under 112 second paragraph is withdrawn from the rejection.

Applicant contends that examiner failed to identify mutually exclusive species. In response to applicant argument that claims 1-6, 13-18 are producing a semiconductor device and claims 7-12, 19-24 are drawn producing a display device using a semiconductor device.

Applicant contends that Ogawa does not teach the feature of forming a resist mask using the second solution ejector on the wiring. In respond to applicant that Ogawa clearly teach the feature of forming a resist mask using the second solution ejector on the wiring (see paragraphs# 58, 109, 234).

Applicant contends that the case law St. Regis paper, Co. V. Bemis Co. Inc. 193 USPQ 8, 11 (7th circuit 1977) does not exist. In response to applicant that this case law still exist (see USPQ for detail). However, the specification contains no disclosure of the critical nature of the process/arrangement on etching the wiring using plurality of linearly-arranged plasma or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen limitations or upon another variable recited in a claim, the applicant must show that the chosen limitations are critical. In re Woodruff, 919 F.2d 1575, 1578 (Fed. Cir. 1990).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2813

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (571) 272-1695, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 6:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, can be reached on (571) 272-1702. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956 (See MPEP 203.08).



Thanh Nguyen
Patent Examiner
Patent Examining Group 2800

TTN